



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,265	07/11/2003	Ronny Skauen	BPA-116	3941
20028	7590	07/13/2006	EXAMINER	
Lipsitz & McAllister, LLC			HOANG, ANN THI	
755 MAIN STREET			ART UNIT	PAPER NUMBER
MONROE, CT 06468			2836	

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

2

Office Action Summary	Application No.	Applicant(s)	
	10/618,265	SKAUEN, RONNY	
	Examiner	Art Unit	
	Ann T. Hoang	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: The claims should not be referred to in the disclosure, as they are on page 2, line 32. Appropriate correction is required.

Claim Objections

3. Claim 1 is objected to because of the wording of "a control means which motor via current conductors is connected to said relay and a power source," in lines 3-5 of the claim, is awkward and unclear. Appropriate correction is required.

4. Claim 2 is objected to because the wording of the claim renders it unclear as to what "will be effected at a lower frequency than without the delay device." See lines 9-10 of the claim. Appropriate correction is required.

5. Claim 4 is objected to because of there is insufficient antecedent basis for "said control unit" in line 5 of the claim. Appropriate correction is required.

6. Claim 5 is objected to because of there is insufficient antecedent basis for "the control unit" in line 3 of the claim. Appropriate correction is required.

7. Claim 5 is objected to as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "or other suitable measuring points in the system or motor circuit," in lines 9-10 of the claim, is indefinite. Appropriate correction is required.

8. Regarding claim 5, the phrase "for example," in line 10 of the claim, renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d). Appropriate correction is required.

9. Claim 5 is objected to because there appears to be typographical errors in "to the in the" in line 8 of the claim, "said relay non-energised relay contacts" in lines 8-9 of the claim, and "sais saftety" in line 17 of the claim. Appropriate correction is required.

10. Claim 5 is objected to because the wording of lines 1-9 is awkward and unclear. For example, the meaning of the phrase "and terminals are connected to the in the open position of the said relay non-energised relay contacts" is not understood and has not been further treated on the merits. Appropriate correction is required.

11. Claim 7 is objected to because of there is insufficient antecedent basis for "the control unit" in line 3 of the claim. Appropriate correction is required.
12. Claim 7 is objected to as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "or other suitable measuring point in the system or motor circuit," in lines 5-6 of the claim, is indefinite. Appropriate correction is required.
13. Claim 8 is objected to because of there is insufficient antecedent basis for "the control unit" in line 2 of the claim. Appropriate correction is required.
14. Claim 9 is objected to as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "and/or other suitable measuring devices or detectors," in lines 3-4 of the claim, is indefinite. Appropriate correction is required.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1, 4 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Ratzel et al. (US 4,477,753).

Regarding claim 1, Ratzel et al. teaches a method for controlling an electric motor (14) comprising an operating relay having relay windings (15, 16) with respective

Art Unit: 2836

first and second relay contacts (18, 19) and a control means which motor (14) via current conductors is connected to said relay and a power source (17) wherein an operator by using said control means controls the application of current to the motor (14) armature or rotor and field coil(s) or field magnet(s), characterised in that monitoring devices are provided which sense indicating parameters that are compared with respective corresponding reference values in a safety function unit in order to determine whether said contacts (18, 19) of said operating relay are mistakenly in the on position, and if one of the said contacts (18, 19) is in the on position, ensures the switching on of at least the other one of said relay contacts (18, 19) so that the current application to the motor (14) is interrupted and the motor (14) stops.

See 1:9-13 and 1:48-55. Also see the FIGURE and 2:46-50, which teach input terminals (10, 11) as being coupled to a control means for controlling the application of current to the motor (14). It is understood that an operator is using said control means, as it is taught in 2:28-30 that the circuit of the FIGURE is part of an electric positioning system for a motor vehicle seat. It is taught in 3:41-60 and 4:5-11 that both relays are switched on via transistors (12, 13) in order to disable the motor (14). A microprocessor that performs comparisons in order to determine whether one of said contacts (18, 19) is in the on position is mentioned in 4:19-26.

Regarding claim 4, Ratzel et al. teaches a control system for an electric motor (14), comprising an operating relay having relay windings (15, 16) with respective relay contacts (18, 19), a control means, which motor (14) via current conductors is connected to said relay and a power source (17) wherein an operator by using said

control means controls the application of current to the motor (14) armature or rotor and field coil(s) or field magnet(s) in such manner that the operation of said motor (14) is controlled, characterised in that the system further comprises a safety function unit (34) and there are provided sensors/sensing means (20, 21) arranged at suitable measuring points in the system or motor circuit connected to the said safety function unit (34) and arranged so that when there is no control signal to the relays, said contacts of both relays are energised and the motor (14) stops.

See abstract, 3:41-60, 4:2-11 and 4:59-65, which disclose that both relays are switched on via transistors (12, 13) in order to disable the motor (14) when there is no control signal to the relays, or to transistors (12, 13) that drive the relays. Also see the FIGURE and 2:46-50, which teach input terminals (10, 11) as being coupled to a control means for controlling the application of current to the motor (14). It is understood that an operator is using said control means, as it is taught in 2:28-30 that the circuit of the FIGURE is part of an electric positioning system for a motor vehicle seat.

Regarding claim 9, the sensors/sensing means (20, 21) of Ratzel et al. comprise logic gates suitable for measuring voltages at the transistors (12, 13) and relay windings 15, 16). See the FIGURE.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2836

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ratzel et al. (US 4,477,753). Ratzel et al. discloses that said safety function unit (34) is provided with terminals which via wires are connected to the control means, wires are connected to one side of the respective relay windings (15, 16), so that the voltage at the said windings can be sensed and given as a signal to the connected terminals on the said safety unit (34), whose opposite sides are connected via wire to the power source (17), and terminals are connected to the relay contacts (18, 19). See the FIGURE. The safety function unit (34) is connected to the control means through diodes (32, 33), to one side of the respective relay windings (15, 16) through diodes (23, 24) and transistors (12, 13), and to the relay contacts (18, 19) through diodes (27, 28). The reference discloses that the safety function unit (34) is connected at suitable measuring points so that it can be sensed whether said relay contacts (18, 19) are in an on position (energised), wherein the sensed value can be compared with a reference value, and the sensed position is given as a signal to the said terminals, and a device is provided in the said safety unit (34) which in the event of a relay contact (18, 19) being stuck or welded in an on position immediately applies an operating signal to the opposite side of the relevant relay winding (15, 16), so that the electric circuit is broken and the motor (14) stops. See 1:9-13 and 1:48-55. A microprocessor that performs comparisons in order to determine whether one of said contacts (18, 19) is stuck or welded in the on position is mentioned in 4:19-26. The reference does not specify that

the signals from the respective relay contacts (18, 19) and the relay windings (15, 16) are compared in the said safety unit (34).

However, the FIGURE shows that the signals from the respective relay contacts (18, 19) and the relay windings (15, 16) are fed to AND logic gates (21, 22), which perform a function similar to a comparison. It would have been obvious to one of ordinary skill in the art at the time of the invention to use comparators in place of the AND logic gates, as comparators would be an alternative means of determining whether the inputs from the respective relay contacts (18, 19) and the relay windings (15, 16) were asserted and of the same value, in order to determine whether the relay contacts were stuck or welded in an on position.

Regarding claim 14, the sensors/sensing means (20, 21) of Ratzel et al. comprise logic gates suitable for measuring voltages at the transistors (12, 13) and relay windings 15, 16). See the FIGURE.

19. Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ratzel et al. (US 4,477,753) in view of Hirschfeld (US 5,128,500). Regarding both claims, Ratzel et al. does not disclose the embodiment of the control means connected to input terminals (10, 11).

However, Hirschfeld discloses a control means comprising a switch assembly as part of an electric positioning system for a motor vehicle seat. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the switch assembly of Hirschfeld as the control means in the control system of Ratzel et al. in

order to provide an interface for the operator to control the motor and position of the vehicle seat.

20. Claims 10, 17 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ratzel et al. (US 4,477,753) in view of Sander et al. (US 4,389,692). Regarding claims 10, 17 and 21, Ratzel et al. does not disclose a thermoswitch.

However, Sander et al. discloses a thermoswitch (8) connected to a motor armature to provide overload protection to a motor (4). See abstract and Fig. 1. It would have been obvious to one of ordinary skill in the art at the time of the invention to connect the thermoswitch of Sander et al. between the motor armature and the safety function unit of the control system of Ratzel et al. in order to provide overload protection to the motor that works in conjunction with the safety function unit.

21. Claims 2, 3, 6, 7, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ratzel et al. (US 4,477,753) in view of Matsuki et al. (US 6,657,833) and Newell, III et al. (US 4,638,850).

Regarding claim 2, Ratzel et al. does not disclose that a voltage is sensed which is indicative of the voltage at the said relay winding (15, 16) and compared with a reference voltage. Ratzel et al. also does not disclose a delay device.

However, Matsuki et al. discloses a method of detecting that a relay (30, 32) is stuck or welded, characterised in that a voltage (RV1, RV2) is sensed which is indicative of the voltage of a relay winding, which voltage is compared with a reference voltage (Rvref) and if the voltage is found to be too low in relation to a threshold value (Rvref), it is judged that the relay (30, 32) is stuck or welded. See abstract, Fig. 1, 2:65-

Art Unit: 2836

67 and 3:1-2. The reference does not specify that the threshold value (R_{vref}) is a level at which the relays do not fail, but are close to doing so. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to determine the optimum threshold level, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of detecting that a relay is stuck or welded as disclosed by Matsuki et al. in the method for controlling an electric motor of Ratzel et al. in order to provide an accurate and reliable means for detecting that a relay was stuck or welded so that the motor could be safely disabled.

Additionally, Newell, III et al. discloses a method of applying a delay prior to reapplication of approved voltage to a relay winding after an interruption of power. See 7:34-45. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply a delay prior to reapplication of approved voltage to a relay winding after an interruption of power, as disclosed by Newell, III et al., in the method of controlling an electric motor of Ratzel et al. in order to avoid damage to the motor caused by reapplication of power when the voltage was below rated voltage and further enhance reliability, as disclosed by Newell, III et al. Accordingly, the relay winding would be effected at a lower frequency than without the delay device.

Regarding claim 3, claims 1 and 2 recite all the limitations of claim 3. Claim 3 is rejected as a consequence of the rejection on claim 2. See above rejections.

Regarding claim 6, Ratzel et al. discloses that the safety unit (34) further comprises a terminal which via a wire is connected to a wire connected to the input voltage to the motor (14), so that the voltage at this point can be sensed and given as a signal to the said terminal. The safety unit (34) is connected to the input voltage to the motor (14) through diodes (27, 28). See the FIGURE. The reference does not disclose a device that determines whether the sensed voltage is too low in relation to a predetermined threshold value, nor does it disclose a delay device.

However, Matsuki et al. discloses a method of detecting that relays (30, 32) are stuck or welded, characterised in that voltages (RV1, RV2) are sensed which are indicative of the voltage applied to a motor (36) via the relays (30, 32), which voltages are compared with a reference voltage (Rvref) and if the voltage is found to be too low in relation to a predetermined threshold value (Rvref), it is judged that the relay (30, 32) is stuck or welded. See abstract, Fig. 1, 2:65-67 and 3:1-2. The reference does not specify that the threshold value (Rvref) is a level at which the relays to do not fail, but are close to doing so. However, it would have been obvious to one of ordinary skill in the art at the time of the invention to determine the optimum threshold level, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of detecting that a relay is stuck or welded as disclosed by Matsuki et al. in the method for controlling an electric motor of Ratzel et al. in order to

Art Unit: 2836

provide an accurate and reliable means for detecting that a relay was stuck or welded so that the motor could be safely disabled.

Additionally, Newell, III et al. discloses a method of applying a delay prior to each reapplication of voltage to a relay winding after an interruption of power. See 7:34-45. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply a delay prior to reapplication of voltage to a relay winding after an interruption of power, as disclosed by Newell, III et al., in the method of controlling an electric motor of Ratzel et al. in order to avoid damage to the motor caused by reapplication of power to the opposite side of the relevant relay winding when the voltage was below rated voltage and further enhance reliability, as disclosed by Newell, III et al. Accordingly, the relay winding would be effected at a lower frequency than without the delay device.

Regarding claim 7, Ratzel et al. discloses that the safety unit (34) is equipped with terminals which via wires are connected to the control means through diodes (32, 33), and a terminal connected to a suitable measuring point in the system or motor circuit so that the voltage at this point can be sensed and given as a signal to said terminal. See the FIGURE. Regarding the limitations of claim 7 dealing with determining whether the sensed voltage is too low and a suitable delay device, these limitations correspond to those of claim 6. See above rejection.

Regarding claims 15 and 16, the sensors/sensing means (20, 21) of Ratzel et al. comprise logic gates suitable for measuring voltages at the transistors (12, 13) and relay windings 15, 16). See the FIGURE. Also note that Matsuki et al. discloses

voltmeters (40, 42) suitable for measuring the voltages across the relays (30, 32). See Fig. 1.

22. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ratzel et al. (US 4,477,753) in view of Matsuki et al. (US 6,657,833), Newell, III et al. (US 4,638,850), and Hirschfeld (US 5,128,500). Regarding both claims, Ratzel et al. does not disclose the embodiment of the control means connected to input terminals (10, 11).

However, Hirschfeld discloses a control means comprising a switch assembly as part of an electric positioning system for a motor vehicle seat. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the switch assembly of Hirschfeld as the control means in the control system of Ratzel et al. in combination with Matsuki et al. and Newell, III et al. in order to provide an interface for the operator to control the motor and position of the vehicle seat.

23. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ratzel et al. (US 4,477,753) in view of Matsuki et al. (US 6,657,833), Newell, III et al. (US 4,638,850), and Sander et al. (US 4,389,692). Regarding both claims, neither Ratzel et al., Matsuki et al., nor Newell, III et al. disclose a thermoswitch.

However, Sander et al. discloses a thermoswitch (8) connected to a motor armature to provide overload protection to a motor (4). See abstract and Fig. 1. It would have been obvious to one of ordinary skill in the art at the time of the invention to connect the thermoswitch of Sander et al. between the motor armature and the safety function unit of the control system of Ratzel et al. in combination with Matsuki et al. and

Newell, III et al. in order to provide overload protection to the motor that works in conjunction with the safety function unit.

24. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ratzel et al. (US 4,477,753) in view of Hirschfeld (US 5,128,500) and Sander et al. (US 4,389,692). Neither Ratzel et al. nor Hirschfeld disclose a thermoswitch.

However, Sander et al. discloses a thermoswitch (8) connected to a motor armature to provide overload protection to a motor (4). See abstract and Fig. 1. It would have been obvious to one of ordinary skill in the art at the time of the invention to connect the thermoswitch of Sander et al. between the motor armature and the safety function unit of the control system of Ratzel et al. in combination with Hirschfeld in order to provide overload protection to the motor that works in conjunction with the safety function unit.

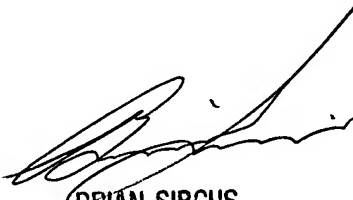
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ann T. Hoang, whose telephone number is 571-272-2724. The examiner can normally be reached Mondays through Fridays, 8:00 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus, can be reached at 571-272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2836

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ATH
6 July 2006



BRIAN SIRCUS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800